

WCG-SMcCall  
ENV-4.00/PRJ-13.00

Subject: Wayne N. Aspinall Unit Operations

Dear Interested Party:

Enclosed is a summary of our April 12, 2001, meeting to coordinate Reclamation's operation of the Aspinall Unit. Also included is a summary of a meeting held on the same date to discuss Gunnison River fluctuations. Highlights of the operation meeting include:

–The Colorado River Basin Forecast Center in Salt Lake City gave a presentation on how river flow and reservoir inflow predictions are made in the Basin and specifically in the Gunnison Basin.

–Gunnison Gorge flows have ranged between 600 and 800 cfs since January. January 1 snowpack readings, that showed 90 percent of average, predicted inflow to Blue Mesa this spring have declined to around 78 percent. Blue Mesa is now not expected to fill under these conditions. Runoff predictions may change dependent on April and May weather patterns; so, inflow predictions are **preliminary** at this time. Under most probable conditions, Gunnison Gorge flows should range around 800 cfs through the summer. The possibility of a spring peak was discussed at the meeting, and pros and cons were presented. At the time of this letter, a small spring peak (2,000 cfs through the Gunnison Gorge) is being considered for mid-May.

–Maintenance activities were discussed, including plans for cleaning trash racks at Morrow Point Dam, removing gravel deposits at the upper end of Crystal Reservoir, and maintenance of the Crystal Powerplant generator. The potential for these activities to increase sediment discharge into the Gunnison Gorge and Black Canyon of the Gunnison National Park was discussed. Planning, NEPA compliance, and scheduling of these activities are ongoing.

–The State Engineer's Office reported that over 380 statements of opposition have been filed concerning the application to quantify the reserved right for the Black Canyon of the Gunnison National Park; the Park Service is hopeful that negotiations may begin this summer on the right. The Fish and Wildlife Service updated the status of flow recommendations for endangered fish species.

If you have any suggestions on improving the operation meetings or the summaries of the meetings, please

let us know. The next operation meeting is scheduled for **Thursday, August 23 at 12:30 pm at the National Park Service's Elk Creek Visitor Center on Blue Mesa.** If you have questions, please call me at (970) 248-0652.

Sincerely,

Dan Crabtree  
Water Management Group Chief

Enclosure

Distribution (see attached list)

bc: Mr. John Bezdek, Office of Interior Solicitor, 1849 C Street NW, Mail Stop 6412, Washington, D.C. 20240

Director, Technical Service Center, Denver CO  
Attention: D-8510

Regional Solicitors Office, Salt Lake City UT  
Attention: Jim Karkut

Regional Director, Salt Lake City UT  
Attention: UC-400, UC-434, UC-438, UC-600, UC-723, UC-720, UC-726 (ea w/encl)

Curecanti Field Division, Attention: CCI-100 1820 South Rio Grande Avenue, Montrose  
CO 81401  
(ea w/encl)

WCG-CDeAngelis, SMoyer, EWarner, SMcCall, JOzga, CStanton, KFogelquist, MSteves,  
RStorbo, JWright, DCrabtree

WCS-RSwickard, JSimons, PPage

WBR:SMcCall:rb:5/7/2001:0638:aspinal may2001  
(ea w/encl)

Distribution List -April 12, 2001Aspinall Operation Meeting

\*An asterisk indicates person attended the meeting

**Argonne National Laboratory** ..... John Hayse, Kirk Lagory  
**City of Grand Junction** ..... Greg Trainor  
**Club 20** ..... Stan Broome  
**Colorado State University** ..... Brett Johnson  
**Daily Sentinel** ..... Dave Buchanan  
**Environmental Defense Fund** ..... Jim Martin  
**Gunnison Basin POWER** ..... Ralph (Butch) Clark, Ramon Reed  
**Gunnison Country Times** ..... Pat Daniel  
**Gunnison River Expeditions** ..... Hank Hotze Bo Gates  
**Helton & Williamsen, P.C.** ..... Duane Helton  
**High Country Citizens Alliance/Sierra Club** ..... Steve Glazer\*  
**Matt Owens Fly Company** ..... Matt Owens  
**Trout Unlimited** ..... Pat Oglesby\*, Melinda Kassen\*  
**Western Colorado Congress** ..... Fred Wetlauffer  
**University of Montana** ..... Jack Stanford  
**Co. River Water Conservation District** . . . Dave Kanzer\*, Marlene Zanetell. David Halford, Ray Tenney  
**Colorado River Energy Distributors**.....Cliff Barrett  
**North Fork Water Conservancy District** ..... Tom Alvey  
**Redlands Water and Power Company** ..... Gregg Strong\*, Mike Gross  
**Uncompahgre Valley Water Users Association** ..... Marc Catlin\*, Jim Hokit  
**Upper Colorado River Commission** ..... Everett Sunderland  
**Upper Gunnison R. Water Conservancy District** ..... Kathleen Curry\*, Mark Schumacher\*, Tyler Martineau, Dennis Steckel, Jim Slattery

**Tri-County**

**Water**.....Mike Berry\*

**Delta County Commissioners** ..... Donna Ferganchick, Jim Ventrello  
**Delta County** ..... Duane Freeman  
**City of Delta** ..... Richard Sales, Wilma Ervin  
**Gunnison County Commissioners** .....  
**Colorado Department of Agriculture** ..... Jim Miller  
**Colorado Division of Water Resources** ..... Wayne Schieldt\*, Frank Kugel, Richard Rozman  
**Colorado Division of Wildlife** ..... Daniel Brauch,,Sherman Hebein\*, Pat Martinez, Rick Anderson  
**Colorado Water Conservation Board** ..... Randy Seaholm\*, Ray Alvarado, Michelle Garrison\*  
**Wyoming State Engineers Office** ..... John Shields  
**Congressman Scott McInnis** ..... Joy Peck  
**Senator Wayne Allard** ..... Shane Henry  
**Senator Ben Nighthorse Campbell** ..... George Rossman ,Katie Aggler\*  
**Army Corps of Engineers** ..... Grady McNure  
**Bureau of Land Management** ..... Allan Belt, Dennis Murphy, Jim Ferguson, Carl Bauer, Roy Smith, Jim Ferguson, Rooster Barnhart\*  
**Fish and Wildlife Service** ..... Rick Krueger, Frank Pfeifer, Al Pfister\* Chuck McAda\*, Terry Ireland\* George Smith  
**National Park Service** ..... Sheridan Steele\*,Myron Chase\*, Ken Stahlnecker\* Mark Wondzell\* Ron Thomas, Bill Hansen, Chuck Pettee\*  
**National Weather Service** ..... Bill Reed, Brian Avery  
**National Oceanic & Atmospheric Administration** ..... Andrea Ray\*, Klaus Weickmann  
**U.S. Geological Survey** ..... Paul von Guerard\*, Bob Boulger\*, Bob Jenkins, Gordon Mueller  
**Land and Water Fund** ..... Bart Miller\*  
**Western Area Power Administration** ..... Shane Collins\*, Clayton Palmer  
Jeff Ackerman\*,Kathy Crane\*, Ken Green, Annette Falvo, Ken Otto\*,Gary Burton; Margaret Matte  
**Bureau of Reclamation**...Carol DeAngelis\*, Sue Moyer\*, Ed Warner\*, Steve McCall\*, Coll Stanton\*,

Karen Fogelquist\*, John Ozga, Russ Storbo, Ruth Rydiger, Gary McDermott, Don Phillips\*, Dick Girvan, Arlo Allen, Jane Blair\*, Paul Davidson\*, Larry Crist, Christine Karas, Tony Morton, Terry Stroh\*

**Interior Solicitors Office**..... Jim, Karkut\*, John Bezdek, Peter Fahmy

**Department of Justice**..... Dave Gehlert

Aspinall Unit Operation Coordination Meeting  
April 26, 2001

**Participation:** This meeting was held in Reclamation's Grand Junction Office. Attendants are noted on the distribution list.

**Purpose of Meeting:** The purpose of these meetings-- held in January, April, and August-- is to gather input for determining upcoming operations for Blue Mesa, Morrow Point, and Crystal Reservoirs. This input is used in Reclamation's development of an overall 24-month study for operation of Reclamation projects in the Upper Colorado River Basin, which includes plans for Glen Canyon, Flaming Gorge, and Navajo Units as well as the Aspinall Unit. Operation of the Aspinall Unit considers projected inflows to its reservoirs, flood control needs, existing water rights, minimum instead flows, target elevations for reservoirs, flow needs for endangered fish and other resources, recreation, hydropower needs and other factors. In addition, the meetings are used to coordinate activities and exchange information among agencies, water users, and other interested parties concerning the Gunnison River.

Handouts provided included data on August-January operations; projected inflows to the reservoirs; and potential operation plans under maximum, most, and minimum probable water supply forecasts.

Activities related to long-term operation planning were also discussed at the meeting. Many of the field studies leading to flow recommendations to help recover downstream endangered fish and to quantify a Federal reserved water right for the Black Canyon of the Gunnison National Park have been completed, and an application to quantify the reserved right has been filed. The Fish and Wildlife Service draft flow recommendations for endangered fish in the Gunnison River were also discussed. These operation meetings will be used more in the future to discuss proposals for long-term operation plans to address these and related resource management issues.

**River Forecasting:** Cara McCarthy with the Colorado Basin Forecast Center in Salt Lake gave a presentation on how river flows and reservoir inflows are predicted. The Forecast Center is part of the National Weather Service. Reclamation relies heavily on their April-July inflow forecast to Blue Mesa Reservoir when planning Aspinall Unit operations. The Forecast Center uses models to predict inflows--in general these are based on the assumption that past weather conditions are the best predictors of future conditions. The results are limited by difficulty in predicting future weather patterns and by a relatively low number of SNOWTEL and snow course sites. Locations of these sites were described, as well, as the actual models. Forecasts are presented in three ways- - most probable, maximum probable and minimum probable. For more information, see [www.cbrfc.noaa.gov](http://www.cbrfc.noaa.gov).

**Operations:**

January-April 2001 Operations: Black Canyon flows during this period ranged from around 600 to 800 cfs. Blue Mesa Reservoir elevation was 10 feet below the winter target at the end of December; this can be attributed to relatively low runoff in the spring of 2000 (72 percent of normal) and to relatively high releases in the summer for hydropower production.

Last winter, the Gunnison Tunnel was opened five times, for 24 - 48 hours each time, to fill Fairview Reservoir which supplies the Uncompahgre Valley with drinking water. This causes an approximate 65 cfs drop in downstream canyon flows. In March, flows were lowered to around 500 cfs for part of a day to facilitate repairs on the Gunnison Tunnel Diversion Dam.

April-August 2001 Operation: Forecasted inflow to Blue Mesa Reservoir is around 550,000 acre-feet or 78 percent of normal (maximum probable is 747,000 af and minimum is 354,000 af). The North Fork forecast is also low--around 63 percent. The amount of inflow predicted into Blue Mesa this spring would be expected to be exceeded in 70 percent of the years. Under most probable conditions,

Blue Mesa is expected to be 8 feet short of filling, or approximately 80,000-90,000 acre-feet. Under most probable conditions, flows in the Gunnison Gorge should be around 600 cfs in May, 700-900 cfs during the summer, and 1000 cfs in late fall. Changes in snowpack may occur in May, so any predictions at this time are **preliminary**.

The Colorado Division of Wildlife requested stable flows in April to facilitate efforts to spawn rainbow trout downstream from Crystal. Reclamation and CDOW will coordinate this. A September 25<sup>th</sup> - 28<sup>th</sup> flow of 600 cfs for 5 days was requested for trout monitoring in the Gunnison Gorge. Conditions are such that this should be able to occur. The National Park Service will conduct followup vegetation monitoring during the second half of July, and if possible, would like to see 5 - 6 days of 500 - 600 cfs. Due to anticipated hydropower needs this summer and also due to summer recreation uses, this request may not be met. Reclamation and the Park Service will continue to coordinate on this.

According to Fish and Wildlife Service draft flow recommendations, the predicted inflow puts operations into a classification of moderately dry to average dry. Under these conditions, flows of 7,000 cfs to 9,500 cfs would be recommended for endangered fish as measured at the Whitewater gage. Part of this flow would be met by tributaries downstream from Aspinall, but a peak release would also be needed from Aspinall. The Service recommended that attempts be made to meet these flows; Reclamation has not included a peak in the operation plan yet (because of Blue Mesa content and because Blue Mesa is expected to already be 8 feet short of filling), and indicated a final decision would be made shortly after the operation meeting.

The following input was received on the proposed April - July operations. Colorado Water Conservation Board supported the plan and thought a peak this year was not appropriate; the Colorado River Water Conservancy District expressed similar support. The National Park Service said that a peak would benefit the National Park. The Colorado Division of Wildlife plans to stock 4" - 6" rainbows downstream from the Smith Fork this May, and was concerned that a peak flow might increase mortality of these fish since they are not yet adapted to riverine conditions. The Land and Water Fund expressed support for a peak; and suggested at least operations start laying the ground work for a peak next spring.

Aspinall Unit Maintenance Work: Terry Stroh discussed NEPA compliance on three activities: dredging a gravel bar in the upper end of Crystal Reservoir; cleaning Morrow Point trash racks, and rewinding generators at Crystal. An environmental assessment on the dredging will be mailed out in the next few weeks—this work may occur in late fall. Monitoring of water quality has already begun. An assessment on Morrow Point trash rack cleaning will be released later this year with work probably not to occur until 2002 at the earliest. Primary concerns during scoping activities were effects of increased turbidity and related effects on fisheries and recreation. The Crystal rewind will not affect flows or operations and is not considered a significant activity. The rewind would increase flexibility—allowing more water (100-150 cfs additional) through the powerplant that might otherwise go through the bypass.

### **Agency/Organization Activities and Discussion of Related Activities:**

**National Weather Service**-The short term (5 - 7 days) forecast is for a warming trend, increasing runoff. No clear pattern for the next few months. See [www.cpc.ncep.noaa.gov](http://www.cpc.ncep.noaa.gov) for additional information.

**Fish and Wildlife Service** - FWS hopes to finalize flow recommendations. Meeting with WAPA, CREDA, and water users to try to resolve problems. Generally the draft report calls for a more natural hydrograph, with magnitude of the spring peak varying with the amount of unregulated inflow to Blue Mesa. A base flow of 300 cfs downstream from the Redlands Diversion is discussed in the report. The types of peaks discussed are listed below (draft) – these are flows at the Whitewater gage, so they include flows from the North Fork, Uncompahgre

and other tributaries as well as from the Aspinall Unit:

Extremely dry year-4,000 cfs or greater  
Moderately dry year- 7,000 cfs or greater  
Average dry year-9,500 cfs or greater  
Average wet year-12,500 cfs or greater  
Moderately wet year-16,000 cfs or greater  
Wet year-20,000 cfs or greater

As indicated previously, this year is between a moderately dry and average dry year.

**State Engineer-**There were a record number of official objectors(383) to the Black Canyon reserved right claim.

**Upper Gunnison Water Conservation District-**Asked about the schedule for the Aspinall EIS on reoperating to help meet endangered fish flows. Reclamation indicated the process would start when fish flow recommendations were firmed up.

**Colorado Division of Wildlife -** Kokanee release from Roaring Judy went well this year-Taylor releases were increased to help fish make it to Blue Mesa. Will stock around 50,000 4" - 6" rainbows between Smith Fork and Austin this May-concerned that high flows might reduce effectiveness of this. Also will stock Colorado River strain rainbows upstream. New regulations-catch and release on rainbow trout-are in effect on the Crystal Dam-National Park reach this year, in addition to downstream areas. Working with BLM on public access downstream from the North Fork-Reclamation can also help with this. Conducting studies of lake trout in Blue Mesa this year, presently tagging fish.

**Colorado River Water Conservation District -** Supports this year's proposed operation -will remain active and vigilant regarding the reserved right claim.

**Sierra Club/High Country Citizens -** Asked WAPA about long-term power contract renegotiations-WAPA suggested a request in letter form. Groups also active in water quality issues in the Gunnison Basin and expressed disappointment that State did not support flow recommendations this year. Asked if there would be value in doing more icing studies-Blue Mesa winter target elevation is based on icing concerns. Reclamation indicated that this would be placed on the August agenda.

**Colorado Water Conservation Board -** The Board representative indicated that meetings on the Gunnison River Basin Programmatic Biological Opinion will start this month.

**U.S. Geological Survey-** The Gunnison gage below the Tunnel has been funded and will continue. Boulder in the river interfering with this gage was moved this spring.

**Bureau of Land Management -** BLM appreciates the notification process for flow changes-helps the public. This summer, BLM will start work on a management plan for the area-contact BLM in Montrose to be on mailing list (970-240-5300).

**Western Area Power Administration -** Indicated that Morrow Point elevations should be suitable for the Morrow Point boat tour in mid-May-NPS should check with Jeff Ackerman to coordinate. Power situation looks grim for California and parts of southwest this summer. Power prices may be very high. CRSP can provide some emergency power-will be compensated with power.

**Uncompahgre Valley Water Users -** The water users completed maintenance work on the Gunnison Tunnel Diversion dam this spring. Irrigation started in late March in the Uncompahgre Valley. Jim Hokit is recovering well-and everyone sends their best to him!

**National Park Service** -New administration in Washington has decided not to withdraw the reserved right claim, but rather negotiate it. Work being done on a “stay” to permit the negotiations. Negotiations could start this summer—because of large number of objectors NPS encouraged people to consolidate into groups. NPS will try not to disrupt existing uses or affect future development.

**Next Meeting-August 23<sup>rd</sup>, Elk Creek Visitors Center, Blue Mesa Reservoir, 12:30 pm**

### **Gunnison River Fluctuations Pre-Meeting April 27**

An informal meeting preceding the operations meeting was held to continue discussions from the last meeting regarding Gunnison River fluctuations downstream from Crystal Dam. Reclamation reviewed the following background information:

Crystal Reservoir is operated to smooth out peaking releases from upstream Morrow Point. Changes in Gunnison Tunnel diversions needed by the Uncompahgre Valley Water Users (UVWUA) are requested through the Grand Junction Office and relayed to Reclamation’s Salt Lake Office. Changes in Crystal releases are directed from Reclamation’s Salt Lake Office to the control center at Page, Arizona, where Crystal changes are remotely controlled. Salt Lake discusses changes with Reclamation’s Grand Junction Office and WAPA. Reclamation’s Grand Junction Office checks with CDOW and FWS on major changes and uses a “fax list” and news releases to keep people informed. Reclamation and UVWUA attempt to time releases and diversions to minimize flow fluctuations in the Canyon. If UVWUA has a mechanical malfunction, they alert the Grand Junction Office immediately so appropriate action can be undertaken.

More people are monitoring flows as information is readily available over the Internet. If people have questions or concerns with what they see at the Gunnison River Gage, they are urged to call Reclamation in Grand Junction—to have their questions answered or to alert Reclamation to a sudden fluctuation that may have been missed (970-248-0600). A toll free # 1-800-276-4828—is updated frequently and is a good source of information on Gunnison flows (also Lake Fork, Taylor, Uncompahgre, Dolores, and Colorado Rivers).

Fluctuations downstream from Crystal can occur for several reasons:

-When Crystal releases are set for a constant or stable MegaWatt (MW) production, water releases vary due to changes in Crystal Reservoir elevation. At less than full MW production, releases are generally evened out by a “flow controller” with fluctuations less than 50 cfs; however, at full power production—as seen in August of 2000—daily flows can fluctuate 200 cfs (see figure 2).

-Unforeseen events (power outages, mechanical problems) and municipal diversions through Gunnison Tunnel. Bypass outlets are set to minimize changes in releases if the powerplant goes down.

–If Morrow Point releases were continued in a peaking mode during a Crystal spill, Crystal’s reregulating ability would be reduced. When Crystal is spilling, the normal procedure is to set Morrow Point at constant release. Morrow Point’s peaking capability is thus eliminated and can be very costly in terms of power production.

Paul Davidson briefly discussed the fluctuations that occurred last August. In the last few years, we have had equipment problems that prevented full (30 MW) power production. This was corrected last summer and the plant was operated at 30 MW in August to help meet power needs (this not only

produces more power at Crystal, but allows higher releases through Morrow Point and Blue Mesa). When set at a constant 30 MW, changes in Crystal Reservoir elevations (caused by Morrow Point peaking) determine how much flow is released to produce the 30 MW (see figure 3). Release changes are not sudden—occur over an 8 - 12 hour period (figure 2). When power production is 28 MW or lower, the “flow controller” adjusts the power production from the turbines in order to keep a more constant release rate. With high power needs this summer, the plant may be operated at 30 MW leading to the 100 - 200 cfs fluctuations.

Cross-section data from Ute Park was reviewed. Reclamation had done some analysis on some cross-sections deemed important for fish habitat by the CDOW. These cross-sections were selected by CDOW and surveyed in the mid 1980's. They probably have changed but are representative of what the river actually looks like. The relationship between depth and discharge through the cross-section was displayed and discussed. It did raise some interesting questions and it was agreed that Reclamation would work with other agencies (CDOW) to further evaluate possible impacts of large fluctuations on trout habitat.

-WAPA indicated there have always been 200 cfs fluctuations and that it is part of historical operation. WAPA reminded the group not to set operation parameters without good science.

-CDOW indicated that fluctuations at lower flow levels (e.g. a 200 cfs fluctuation when river flows were 600 cfs) are harmful to trout. At higher flows—say over 1,000 cfs—fluctuations are less of a problem. At 300 cfs, CDOW would be very concerned with fluctuations. The critical times for rainbows and browns are during emergence and the worst effects are from dewatering shallow areas and low velocity backwaters. Fluctuations would mainly affect young fish, although significant fluctuations can also affect insects. CDOW is most concerned with mid June fluctuations. At this time of year, stability is important for young trout populations. Dramatic pulsing can cause higher mortality rates. By July, the impact diminishes and 3' - 4" fluctuations over the course of one day may have some adverse effect, but not as significant.

-Reclamation indicated that the “flow controller” would be in effect when powerplant was set below full capacity of 30 MW which keeps daily fluctuations down to 50 cfs or so a day. Fluctuations greater than 50 cfs would not be expected when low flows were occurring (for example at 600 cfs) since low flows would require Crystal to be operating at less than full power (30 MW). Figure 5 gives a general idea of how often powerplant has been at full capacity in recent years.

- There are some fluctuations which occur during the winter months when diversions are made to the Fairview Reservoir, part of Montrose's domestic water supply. These are typically 65 cfs and last for one to five days depending on the demand of the system. Feedback from the group indicated this fluctuation was not a concern when the Canyon is flowing in the 500 - 600 cfs range or greater, but could have some impact at lower flows.

Steve Glazer pointed out that there is no operation plan/manual to speak of for the Aspinall Unit. It might be appropriate to develop one in the future, perhaps after the dust has settled on the Fish and Wildlife Service flow recommendations and National Park Service Water right.

The meeting had to break to get ready for the operation meeting. Reclamation, with help from NPS, CDOW, and FWS, will review available cross-section information and other data to better assess river stage at various flow levels and river locations.